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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,198	05/03/2001	Deborah Ann Haitko	RD-28698	6436

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH CENTER
PATENT DOCKET RM. 4A59
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NISKAYUNA, NY 12309

EXAMINER

COLON, GERMAN

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 08/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/847,198	HAITKO ET AL.	
	Examiner	Art Unit	
	German Colón	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 16 is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,9,10,14 and 15 is/are rejected.
- 7) ☒ Claim(s) 3,4,11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Amendment, filed on May 12, 2003, has been entered and acknowledged by the Examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 6, 7, 9, 10, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Vrijer (US 4,319,157) in view of De Maagt et al. (US 5,986,405).

Regarding claim 1, De Vrijer discloses a mercury vapor discharge lamp but is silent regarding the limitation of said lamp comprising a silver salt or a gold salt in a concentration range between 0.1 mg and about 30 mg per lamp. However, in the same field of endeavor, De Maagt discloses a high pressure vapor lamp comprising a silver salt as an oxygen dispenser with the purpose of decreasing blackening of the phosphor coatings, therefore, increasing the luminosity of the lamp (see Col. 1, lines 44-45, and Col. 2, lines 64-67). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a silver salt oxygen dispenser to the lamp of De Vrijer, in order to decrease blackening of the phosphor coatings and to increase the luminosity of the lamp.

De Vrijer-De Maagt is silent in regards to the limitation of silver salt being in a concentration range between 0.1 mg and about 30 mg per lamp. However, De Maagt teaches that the amount of silver oxide is not critical; the amount may be influenced by the dimensions of the lamp, its production process and the presence of coatings inside the envelope (see Col. 3, lines 56-60). Accordingly, it is considered within De Maagt teachings that the determination of any specific range can be obtained by undue experimentation. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the silver salt in a range between 0.1 mg to about 30 mg, since De Maagt teaches the determination of any specific range can be obtained by experimental procedures.

Regarding claim 2, De Vrijer-De Maagt discloses the silver salt being silver oxide (see '405, Col. 5, line 30).

Regarding claim 6, claim 6 is rejected over the same reasons stated in the rejection of claim 1.

Regarding claim 7, De Vrijer-De Maagt discloses a mercury discharge lamp comprising an amount of silver salt. The Examiner notes that the recitation "the silver salt or gold salt prevents the interaction of elemental mercury with ferric and cupric compounds which oxides elemental mercury to a soluble form" has not been given patentable weight because is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Referring to claim 9, De Vrijer-De Maagt discloses a method for providing a mercury vapor discharge lamp comprising an amount of silver salt in a concentration range between 0.1 mg and about 30 mg. The same reasons for combining stated in claim 1 apply.

Referring to claim 10, De Vrijer-De Maagt discloses the silver salt being silver oxide ('405, see Col. 5, line 30).

Referring to claim 14, claim 14 is rejected over the same reasons stated in the rejection of claim 9.

Referring to claim 15, De Vrijer-De Maagt discloses a mercury discharge lamp comprising an amount of silver salt. The Examiner notes that the recitation "the silver salt or gold salt prevents the interaction of elemental mercury with ferric and cupric compounds which oxides elemental mercury to a soluble form" has not been given patentable weight because is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

4. Claims 1, 6, 7, 9, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinhardt (US 6,043,603) in view of Hasenpusch et al. (US 5,460,643).

Regarding claim 1, Weinhardt discloses a fluorescent lamp having 10 mg or less of mercury content, but is silent regarding the limitation of said lamp comprising a silver salt or a gold salt in a concentration range between 0.1 mg and about 30 mg per lamp.

The Examiner notes that it is well known in the art the concern that a waste stream from the disposal of fluorescent lamps may leach mercury into the ground.

Hasenpusch teaches the advantage of using a silver salt and as a suitable material for removing mercury from waste deposits which can leach out into the ground water (see Col. 1, lines 6-8, 18-19, and 64-67). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the silver salt disclosed by Hasenpusch to the fluorescent lamp of Weinhardt, in order to remove mercury from waste deposits which can leach out into the ground upon disposal of the lamp.

Weinhardt-Hasenpusch is silent regarding the amount of silver salt being in a range of 0.1 to 30 mg. However, Hasenpusch discloses an amount of 7.5 g of silver nitrate (see Col. 2, line 58) being suitable for removing or adsorbing 6.7 g of mercury. Accordingly, based on this ratio of grams of silver nitrate to grams of mercury, it would have been obvious to one skilled in the art to provide the silver salt in an amount of about 10 mg in order to adsorb said lamp's mercury content of 10 mg or less.

Regarding claim 6, claim 6 is rejected over the same reasons stated in the rejection of claim 1.

Regarding claim 7, Weinhardt-Hasenpusch discloses a fluorescent lamp comprising an amount of silver salt. The Examiner notes that the recitation "the silver salt or gold salt prevents the interaction of elemental mercury with ferric and cupric compounds which oxides elemental mercury to a soluble form" has not been given patentable weight because is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a

prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Referring to claim 9, Weinhardt-Hasenpusch discloses a method for providing a fluorescent lamp comprising an amount of silver salt in a concentration of about 10 mg. The same reasons for combining stated in claim 1 apply.

Referring to claim 14, claim 14 is rejected over the same reasons stated in the rejection of claim 9.

Referring to claim 15, Weinhardt-Hasenpusch discloses a mercury discharge lamp comprising an amount of silver salt. The Examiner notes that the recitation "the silver salt or gold salt prevents the interaction of elemental mercury with ferric and cupric compounds which oxides elemental mercury to a soluble form" has not been given patentable weight because is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Allowable Subject Matter

5. Claims 8 and 16 are allowed.
6. Claims 3, 4, 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The Examiner notes that the Prior Art of Record discloses a fluorescent lamp comprising a silver salt or a gold salt.

Regarding claim 3, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 3, and specifically comprising the limitation of "the silver salt being silver carbonate". The provision of this compound prevents the spurious formation of leachable mercury upon disposal of the lamp without requiring additional dispensing steps during manufacture.

Regarding claim 4, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 4, and specifically comprising the limitation of "the gold salt comprises gold carbonate, gold halide, gold oxide, gold sulfide, gold acetate, or combinations thereof". The provision of these compounds prevents the spurious formation of leachable mercury upon disposal of the lamp without requiring additional dispensing steps during manufacture.

Regarding claim 8, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 8, and specifically comprising the limitation of "a silver carbonate in a range between about 10 mg and about 30 mg per lamp". The provision of this compound prevents the spurious formation of leachable mercury upon disposal of the lamp without requiring additional dispensing steps during manufacture.

Referring to claim 11, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 11, and specifically comprising the limitation of "the silver salt being silver carbonate". The provision of this compound prevents

the spurious formation of leachable mercury upon disposal of the lamp without requiring additional dispensing steps during manufacture.

Referring to claim 12, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 12, and specifically comprising the limitation of "the gold salt comprises gold carbonate, gold halide, gold oxide, gold sulfide, gold acetate, or combinations thereof". The provision of these compounds prevents the spurious formation of leachable mercury upon disposal of the lamp without requiring additional dispensing steps during manufacture.

Regarding claim 16, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 16, and specifically comprising the limitation of "a silver carbonate in a range between about 10 mg and about 30 mg per lamp". The provision of this compound prevents the spurious formation of leachable mercury upon disposal of the lamp without requiring additional dispensing steps during manufacture.

Response to Arguments

8. Claims 1, 2, 6, 7, 9, 10, 14 and 15 stand rejected over De Vrijer - De Maagt et al.

In the previous Office Action (Paper #5) the Examiner concurred with applicant in that the *high-pressure* discharge lamps disclosed by De Vrijer and De Maagt are distinguished from *low-pressure* discharge lamps. In view of the Examiner's Response to Arguments, the claims were amended to recite "a fluorescent lamp" to differentiate the instant invention from the cited Prior Art.

The Examiner notes that, although *low-pressure* mercury vapor discharge lamps are commonly referred in the art as fluorescent lamps, fluorescent is defined as capable of emitting electromagnetic radiation, especially visible light, by the absorption of incident radiation. See for example US Patent No. 4,559,470 to Murakami et al., where the term fluorescent is used for both *low-pressure* discharge lamps and *high-pressure* discharge lamps (Col. 1, lines 14-15 and 24-25). Thus, the rejection over De Vrijer-De Maagt is deemed proper. To overcome this rejection a rewording of the claim including the limitation "a low-pressure mercury vapor discharge lamp" or "a low-pressure fluorescent lamp" will suffice.

9. Applicant's arguments with respect to claims 1, 6, 7, 9, 14 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Misra et al., in US 5,599,515, discloses a method for removing mercury from a solution wherein AgS is used.

Durham et al., in US 5,409,522, discloses a mercury removal apparatus comprising gold, silver or a mixture thereof.

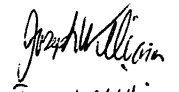
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

SC
gc
July 15, 2003


Joseph Williams